



REMARKS

In response to the above-identified Office Action, Applicants submit the following amendments and remarks. Claims 1-30 are pending.

I. In the Drawings

The Office has objected to the drawings under 37 C.F.R. 1.83(a) because they fail to show the first and second heat transfer plates in fluid communication with each other as described in the Specification. The Office stated correction is required. Amended **Figures 2 and 3** each show first heat transfer plate 125 disposed below microprocessor 130. Tube 115 can be seen connecting the upper right corner of first heat transfer plate 125 to the lower right end of large area heat exchanger or second heat transfer plate 210 on part 120 of portable computing system 100. Tube 115 is shown in dashed lines within large area heat exchanger 210. Tube 115, after traveling through large area heat exchanger 210, exists large area heat exchanger 210 in the lower left portion of the large area heat exchanger and is seen entering coupling disconnect 170. Tube 115 leaves coupling disconnect 170 and goes into fluid container 140. Tube 115 leaves the lower left area of fluid container 140 and travels across first area 110 to the lower left corner of first heat transfer plate 125 completing the circuit. The Applicants respectfully submit that tube 115 shows how the first and second heat transfer plates may be in communication with each other as described in the Specification. Therefore, Applicants respectfully request withdrawal of the objection to the figures.

II. Claims Rejected Under 35 U.S.C. § 103

The Office rejected claims 1-7, 8-16, 18-25, 27, 28, and 30 under 35 U.S.C. § 103(a) as being obvious over Ohashi et al., U.S. Patent No. 5,764,483 (hereinafter Ohashi) in view of Van Brocklin et al., U.S. Patent No. 6,047,766 (hereinafter Van Brocklin). The

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Office states that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the cooling unit of Ohashi with the temperature sensor of Van Brocklin so that when sensing the temperature of the electronic device it initiates fluid movement when the threshold temperature is detected. The Applicants respectfully disagree.

In order to render a claim obvious, the relied upon references must teach or suggest every limitation of the claims, such that the invention as a whole would have been obvious at the time the invention was made to one skilled in the art. To combine references, the Office must show that the elements are taught or suggested by the references and that the references can be combined and that the references suggest or motivate such combination. Ohashi discloses a liquid driven between the heat-receiving header 14 and a flow passage 36 of the heat dissipation header through flexible tube 18 by means of a liquid driving unit 40, which is separately provided. Ohashi fails to teach or suggest a temperature sensor coupled to a processor which causes the fluid flow in a tube when the temperature reaches a threshold. The failure of Ohashi to teach, suggest, or motivate towards a temperature sensor coupled to the processor and the pump is fatal to the asserted rejection.

Van Brocklin discloses a passive heat pipe coupled between the heat sink area and an electronic device. Van Brocklin further discloses the logic circuit and a sensor. The sensor is tied to the logic circuit for determining when the component is too hot. The logic circuit controls a fan 60 which is combined with the heat sink area. When the component is too hot, the sensor informs the logic circuit of this state and the logic circuit controls the fan to circulate air over the heat sink area.

Van Brocklin fails to suggest or motivate the closed loop fluid cooling system placing a first and second heat transfer plate in fluid communication with each other.

Thus, Van Brocklin fails to cure the defect of Ohashi. The failure of Van Brocklin to cure the defect in Ohashi is fatal to the asserted rejection. The Applicants respectfully request the rejection of claims 1-7, 8-16, 18-25, 27, 28, and 30 under 35 U.S.C. § 103(a) as obvious over Ohashi in light of Van Brocklin be withdrawn.

The Office rejected claims 7, 17, 26, and 29 under 35 U.S.C. § 103(a) as being unpatentable over Ohashi in view of Van Brocklin as applied to the claims above, and further in view of Mizuno, U.S. Patent No. 5,333,676 (hereinafter Mizuno). The Office states giving the teachings of Mizuno, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the cooling system of Ohashi with a fluid container coupled to a tube having a sensor for sensing when fluid is slow in a fluid container. The Applicants respectfully disagree.

Ohashi discloses a liquid driven between the heat receiver header coupled to a heat generating semiconductor device and the flow passage of the heat dissipation header through flexible tube 18 by means of a liquid driving unit 40 which is separately provided. Ohashi fails to disclose a temperature sensor coupled to a processor which causes the fluid to flow in the tube when the temperature reaches a threshold. Ohashi fails to suggest or motivate towards a temperature sensor coupled to a processor which causes fluid to flow in the tube. Van Brocklin fails to disclose, suggest, or motivate towards a control logic circuit coupled between a processor and a liquid driving unit. Mizuno fails to teach, suggest, or motivate towards a sensor coupled to a processor which causes fluid flow when the temperature reaches a threshold.

Neither Ohashi, Van Brocklin, or Mizuno teach or suggest the features of coupling a fluid level sensor and a temperature sensor to a fluid pump to regulate the behavior of a closed loop cooling system in a portable computing system. Applicants submit that the Office has provided insufficient justification for the combination of

Ohashi, Van Brocklin, and Mizuno. The combination of Ohashi, Van Brocklin, and Mizuno in an *a la carte* reconstruction using the Application as a blueprint is both unsupported and impermissible.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending (a) are in proper form, (2) are neither obvious nor anticipated by the relied-upon art of record, and (3) are in condition for allowance. A Notice of Allowance is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the Application forward to allowance, the Office is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 and 1.17, particularly extension of time fees.

Respectfully submitted,

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Dated: 9/26/01

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CERTIFICATE OF MAILING:
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on September 26, 2001.

Nadya Gordon 9/26/01
Nadya Gordon Date

Appointed
1/16/01

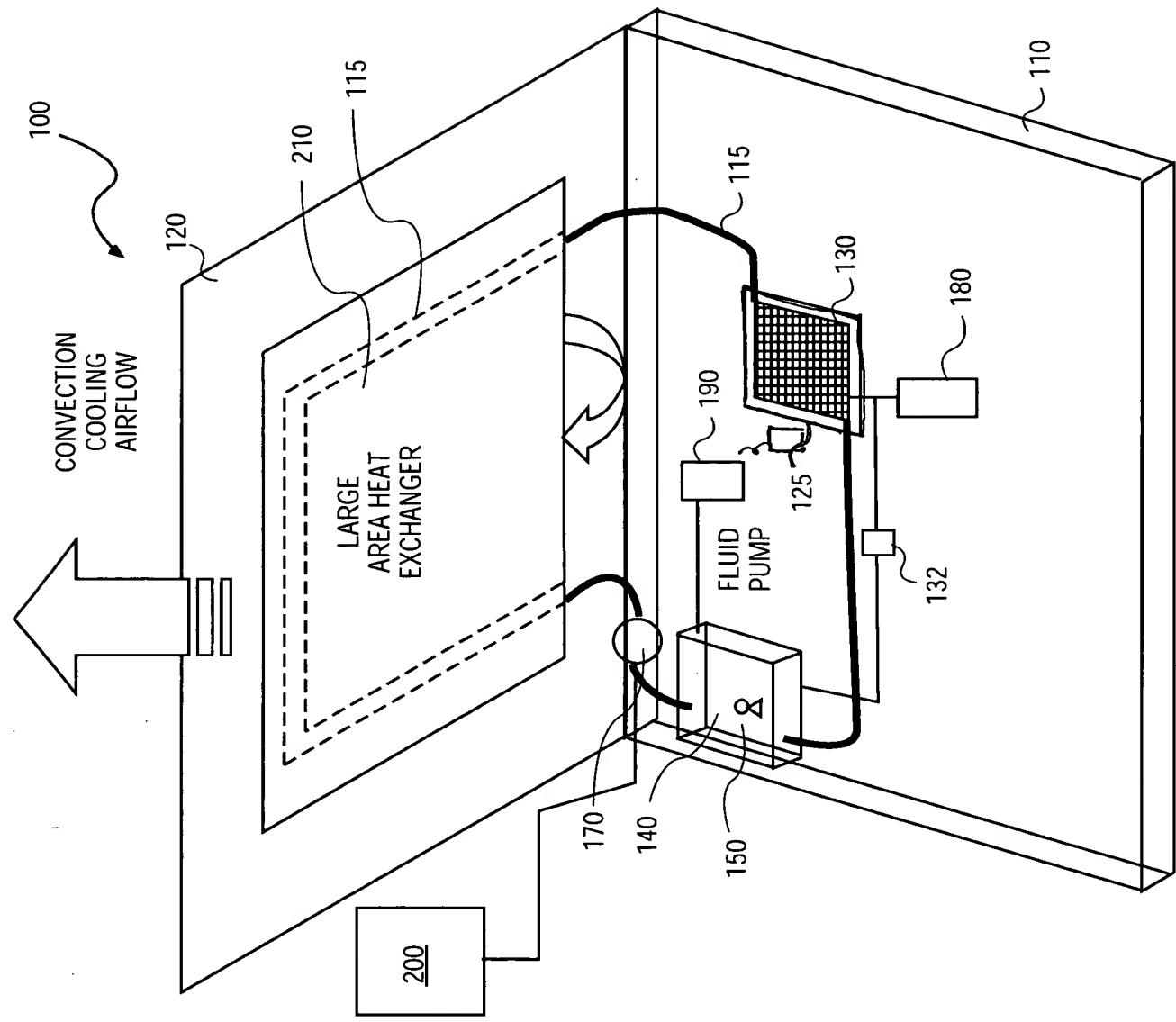


FIG. 2

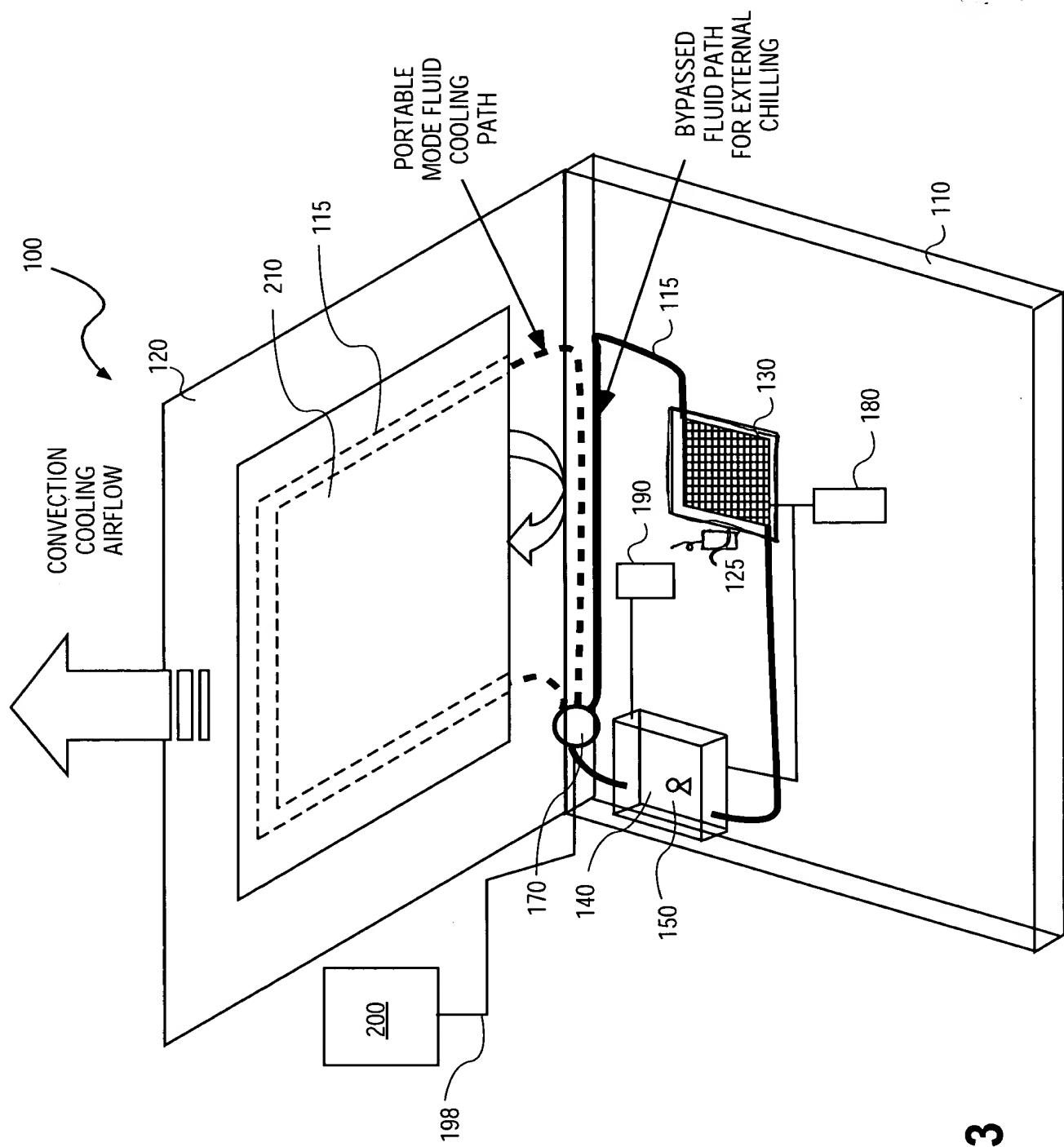


FIG. 3